

Title (en)  
Portfolio managed, demand-side response system

Title (de)  
Portfolioverwaltetes Laststeuerungssystem

Title (fr)  
Portefeuille géré, système de réponse côté demande

Publication  
**EP 2863510 A2 20150422 (EN)**

Application  
**EP 14189531 A 20141020**

Priority  
• US 201361893845 P 20131021  
• US 201314133002 A 20131218

Abstract (en)  
A central site (160), using grid operator requirements to reduce portfolio power according to frequency decreases within a frequency band, determines the optimal frequency triggers at which each load (180, 182, 184, 186; 522-526) within a portfolio should reduce power and by how much power. Power availability of each load (180, 182, 184, 186; 522-526) is optimized. These triggers and individual load power reductions are periodically dispatched from the central site (160) to the individual loads (180, 182, 184, 186; 522-526). Each load (180, 182, 184, 186; 522-526) detects when a frequency deviation occurs and is able to independently and rapidly reduce its power consumption according to the triggers and corresponding power reductions it received previous to the frequency deviation. Reliance upon the central site (160) to detect a frequency deviation and then to dispatch power reductions in real time is not needed. The system also detects frequency increases and directs a portfolio of loads (180, 182, 184, 186; 522-526) to consume more power. The system applies to energy loads (180, 182, 184, 186; 522-526) and detection of a grid signal in general.

IPC 8 full level  
**H02J 3/14** (2006.01)

CPC (source: EP KR US)  
**G05F 1/66** (2013.01 - EP KR US); **H02J 3/14** (2013.01 - EP KR US); **H02J 2310/14** (2020.01 - EP KR US); **Y02B 70/30** (2013.01 - EP US); **Y02B 70/3225** (2013.01 - EP KR US); **Y04S 20/222** (2013.01 - EP KR US); **Y04S 20/242** (2013.01 - EP KR US)

Citation (applicant)  
• US 8417391 B1 20130409 - ROMBOUTS JAN-WILLEM [BE], et al  
• EP 2560136 A1 20130220 - GEN ELECTRIC [US]  
• EP 2595014 A2 20130522 - PALO ALTO RES CT INC [US]  
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JP2019525712A; CN111066055A; CN111260194A; CN108988399A; GB2601074A; GB2601074B; WO2017162910A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
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**EP 2863510 A2 20150422; EP 2863510 A3 20150624; EP 2863510 B1 20151021**; AU 2014338673 A1 20160414; AU 2014338673 B2 20171102; DK 2863510 T3 20151123; DK 2961022 T3 20170501; EP 2961022 A1 20151230; EP 2961022 B1 20170222; ES 2552188 T3 20151126; ES 2622113 T3 20170705; JP 2016540472 A 20161222; JP 6478247 B2 20190306; KR 102233790 B1 20210330; KR 20160091896 A 20160803; PL 2863510 T3 20160429; PL 2961022 T3 20170831; US 2015112501 A1 20150423; US 9471080 B2 20161018; WO 2015059544 A2 20150430; WO 2015059544 A3 20151223

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**EP 14189531 A 20141020**; AU 2014338673 A 20141017; DK 14189531 T 20141020; DK 15169191 T 20141020; EP 15169191 A 20141020; ES 14189531 T 20141020; ES 15169191 T 20141020; IB 2014002173 W 20141017; JP 2016523220 A 20141017; KR 20167012887 A 20141017; PL 14189531 T 20141020; PL 15169191 T 20141020; US 201314133002 A 20131218